

Corn Rootworm Product Evaluation Trials

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The annual University of Illinois “root digs” have begun. Our crew, led by Ron Estes, senior research specialist in agriculture, and Nick Tinsley, visiting research specialist, have dug roots from our so-called “standards” at several of the research and education centers around the state (near Monmouth and Perry and just south of Urbana). Late next week, we will evaluate the treatments – soil insecticides and Bt hybrids – at the Northern Illinois Research and Education Center near DeKalb.

These experiments include many familiar Bt products and soil insecticides and are planted on ground that was a trap crop the previous year. The trap crop, intentionally planted late in relation to nearby corn plots, is interplanted with pumpkins. The late-silking corn plants and pumpkin blossoms attract numerous egg-laying western corn rootworm females, generally creating a favorable environment to challenge the root protection afforded by various corn rootworm products.

At the July 10 field day at the Northern Illinois Research and Education Center, I spoke to about 125 participants, who viewed some significant root injury to the check (control) plots in our corn rootworm product evaluation experiment. Western corn rootworm adults could be found with relative ease feeding on silks and pollen. Within the next week, the larval feeding period should be over. Based on the degree of root injury I observed on a few of the check plants (2 nodes of roots destroyed), we should have interesting and informative results to share later this summer. On July 9 I rated the roots from the Urbana “standard” and also found very significant root injury in the check plots.

The importance of protecting the corn crop from severe rootworm larval feeding should not be underestimated. Earlier this year, Nick Tinsley published a journal article summarizing the impact of corn rootworm larval injury on yield by analyzing a data set of 7,118 root ratings over 19 location years. The locations were DeKalb, Monmouth, Perry, and Urbana from 2005 to 2011. In a given year, not every location was included. The analysis revealed that for each node of roots destroyed by corn rootworms, producers should expect a yield loss of about 15 percent. For a more complete review of this research, see Tinsley, N.A. et al. 2012. Validation of a nested error component model to estimate damage caused by corn rootworm larvae.

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For fields in which drought conditions exist and several nodes of roots have been destroyed, yield losses caused by corn rootworms can be very significant. No wonder such significant research investments are made to develop products that can be used to effectively manage this impressive insect pest of corn. Δ

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Lodged corn in a check (control) plot showing signs of severe corn rootworm larval injury, Northern Illinois Research and Education Center (Shabbona, July 10, 2012).



Corn in a check (control) plot showing signs of severe corn rootworm larval injury and drought stress, Northern Illinois Research and Education Center (Shabbona, July 10, 2012).